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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,612	04/14/2005	Coen theodorus Hubertus Fransiscus Liedenbaum	NL 021023	8177

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER	
JOSEPH, DENNIS P	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
05/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,612	LIEDENBAUM ET AL.	
	Examiner	Art Unit	
	Dennis P. Joseph	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 6 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/531,612.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/9/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to application No. 10/531,612, filed on April 14, 2005. Claims 1-7 are pending and have been examined.

Information Disclosure Statement

2. The information disclosure statement (IDS) was submitted on November 9, 2005 is being considered by the examiner.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections – 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites therein, "addressing the subset among the plurality of subsets which provides the desired colour with the longest life time of the sub-pixels." The limitation is indefinite with

regards to how long the "longest time" is given that no means of measuring this is available. Appropriate correction is required.

For purposes of examination, the limitation will be interpreted as subsets which provide the desired color based on lifetime information of the sub-pixels.

Claim Rejections – 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. **Claims 1-7** rejected under 35 U.S.C. 102(e) as being anticipated by **Cok et al. (US 6,570,584 B1)**

8. Cok teaches in Claim 1:

A full-colour organic electro-luminescent display device comprising a plurality of independently addressable full-colour pixels (Column 2, Lines 33-34, "digital color image display device, that includes a plurality of pixels, each pixel having a plurality of subpixels." A full-colour display is indicated by a plurality of sub-pixels within a pixel.), each full-colour pixel (RGBX) comprising four sub-pixels, a red (R), a green (G), a blue (B) (Figure 7 shows the four

sub-pixel structure with three of the sub-pixels being red, green and blue), and a fourth sub-pixel (X), characterized in that the fourth sub-pixel (X) emits light of a fourth non-white colour with an efficiency higher than the efficiency of each of the R (red), G (green), and B (blue) sub-pixel. (Figure 1 shows the fourth sub-pixel, which is not white, and is used to increase the efficiency of the existing RGB combination. Column 3 Lines 50-53, "Note that the sub-pixels generally vary in their efficiency and the addition of an extra element, either within or without the existing gamut may increase the brightness, and/or lifetime and efficiency of the display." The sub-pixel is added with the desire for improved efficiency over the RGB elements.)

9. Cok teaches in Claim 2:

A full-colour organic electro-luminescent display device according to claim 1, wherein said non-white colour has colour coordinates outside the colour area defined by the colour coordinates corresponding to light emitted from the RGB sub-pixels. (Column 3, Lines 39-43, "This is shown in the chromaticity diagram in FIG. 3 where the area inside the polygon (that is, the number of colors that can be expressed by the system) is increased due to the addition of another color point **27** not within the existing gamut." Figure 3 shows the point 27 is not within the spectrum of the original RGB sub-pixels.)

10. Cok teaches in Claim 3:

A full-colour organic electro-luminescent display device according to claim 1, wherein the fourth sub-pixel comprises a polymeric electro-luminescent compound. (Column 5, Lines 22-24, "In a preferred embodiment, the invention is employed in an emissive display that

includes Organic Light Emitting Diodes (OLEDs) which are composed of small molecule **polymeric OLEDs**.")

11. Cok teaches in Claim 4:

A full-colour organic electro-luminescent display device according to claim 3, wherein the polymeric electro-luminescent compound is a poly(phenylene-vinylene). (Examiner takes official notice that a form of p-phenylene vinylene (PPV) is commonly used in polymer EL devices.)

12. Cok teaches in Claim 5:

A full-colour organic electro-luminescent display device according to claim 1, wherein the non-white colour emitted from the fourth sub-pixel (X) is yellow/green light. (Column 4, Lines 37-41, "The present display device **20** includes sub-pixels that produce colors other than the conventional red, green, and blue colors. A color specification could be written as a combination of the colors available in a specific display device (e.g. red, green, blue, and yellow)." The fourth sub-pixel used can be the color yellow.)

13. Cok teaches in Claim 6:

A full-colour organic electro-luminescent display device according to claim 1, wherein each full-colour pixel comprises a plurality of subsets of sub-pixels available for emitting light of a desired colour (Column 2, Lines 33-34, "digital color image display device, that includes a plurality of pixels, each pixel having a plurality of subpixels." A full-colour display is indicated

by a plurality of sub-pixels within a pixel.), and the device comprises driving means for selectively addressing the subset among the plurality of subsets which provides the desired colour with the highest efficiency. (Figure 1 shows the fourth sub-pixel, which is not white, and is used to increase the efficiency of the existing RGB combination. Column 3 Lines 50-53, "Note that the sub-pixels generally vary in their efficiency and the addition of an extra element, either within or without the existing gamut may increase the brightness, and/or lifetime and **efficiency** of the display." The subset which provides the best efficiency and liftetime is chosen.)

14. Cok teaches in Claim 7:

A full-colour organic electro-luminescent display device according to claim 1, wherein each full-colour pixel comprises a plurality of subsets of sub-pixels available for emitting light of a desired colour (Column 2, Lines 33-34, "digital color image display device, that includes a plurality of pixels, each pixel having a plurality of subpixels." A full-colour display is indicated by a plurality of sub-pixels within a pixel.), and the device comprises driving means for selectively addressing the subset among the plurality of subsets which provides the desired colour with the longest life time of the sub-pixels. (Figure 1 shows the fourth sub-pixel, which is not white, and is used to increase the efficiency of the existing RGB combination. Column 3 Lines 50-53, "Note that the sub-pixels generally vary in their efficiency and the addition of an extra element, either within or without the existing gamut may increase the brightness, and/or **lifetime** and efficiency of the display." The subset which provides the best efficiency and lifetime is chosen.)

Conclusions

15. The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure. **Ben-David et al. (US 7,113,152 B2), Ben-David et al. (US 6,870,523 B1),** and **Kuriwaki et al. (US 6,097,367)** are cited to teach 4 sub-pixel structures which teach improving the display and efficiency.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis P. Joseph whose telephone number is 571-270-1459. The examiner can normally be reached on Monday-Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJ

AMR A. AWAD
SUPERVISORY PATENT EXAMINER